REMARKS

By this amendment, Applicants have amended the claims to further define their invention. In particular, claim 1 has been amended to recite that the bed is packed by fused silica particles or silicon nitride particles having a purity of not less than 99.5% and having a porosity of not more than 0.1%. See, e.g., paragraphs 0035-0037 of Applicants' specification and original claims 7 and 11. Claims 2, 3, 8, 9 and 12 have been amended to be consistent with amended claim 1 and to eliminate the antecedent basis problem noted by the Examiner in numbered section 2 of the Office Action. Claim 12 has been amended to depend from claim 3, and claims 7, 11 and 13-17 canceled without prejudice or disclaimer. Applicants have added claims 18 and 19 to define further aspects of the present invention.

In view of the cancellation of claims 13-17, the objection to these claims in numbered section 1 of the Office Action is moot.

In view of the foregoing amendments to the claims, it is submitted all of the claims now in the application comply with the requirements of 35 U.S.C. 112, second paragraph. Accordingly, reconsideration and withdrawal of the rejection of claims 3-5, 6, 10 and 11 under 35 U.S.C. 112, second paragraph, are requested.

Claims 1, 2 and 13-17 stand rejected under 35 U.S.C. 102(b) as being anticipated by Japanese patent application publication number 11/190,591 to Uchida. Claims 8 and 9 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida. Claims 3, 6 and 10 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida and further in view of U.S. Patent

No. 3,699,206 to Dunn Jr. Claims 4 and 5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida and Dunn, Jr. and further in view of U.S. Patent No. 3,067,005 to Nelson et al. In view of the foregoing amendments to the claims, including incorporating in independent claim 1 certain limitations recited in dependent claim 7 and the limitations of dependent claim 11, it is submitted the foregoing rejections are moot. In any event, it is submitted the presently claimed invention is patentable over the Uchida alone or in combination with Dunn, Jr. and/or Nelson et al. for the following reasons.

Claims 7 and 11 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida and further in view of Japanese patent application publication number 01-282148 to Nobuhara et al. Claim 12 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida and Dunn, Jr. and further in view of Nobuhara et al. Applicants traverse these rejections and request reconsideration thereof.

The present invention relates to an apparatus for production of metal chloride in which chlorine gas is reacted with raw material including metal oxide or metal to chlorinate. The apparatus of the present invention includes a chlorination furnace in which the raw material is held and chlorinated by chlorine gas, and a distributor which is arranged at the bottom of the chlorination furnace and which supplies and disperses chlorine gas into the furnace. According to the present invention, the distributor comprises a bed packed by fused silica particles or silicon nitride particles having a purity of not less than 99.5% and having a porosity of not more than 0.1%. Such a bed

has superior chlorine gas resistance. See, e.g., paragraph 0073 of Applicants' specification.

The Uchida publication discloses a combustion chamber provided with plural fluidizing air supply tubes which reach a fluidized bed inside the combustion chamber from the top thereof, with an appropriate interval in distance. The fluidizing air is supplied to the fluidized bed through the tubes to fluidize the fluidized bed, thereby realizing heat exchanging with combustion gas when the fluidized air passes through the tubes. As admitted by the Examiner, the Uchida publication does not disclose the specific purity, kind and porosity of the ceramic material used. Thus, the Uchida publication does not disclose the apparatus of the present invention, including a bed packed by fused silica particles or silicon nitride particles having a purity of not less than 99.5% and having a porosity of not more than 0.1%.

The Nobuhara et al. publication discloses an anti-corrosion material for chlorine in which fused silica is used. However, fused silica particles and silica nitride particles having a period of not less than 99.5% and a porosity of not more than 0.1% are not disclosed.

It is submitted neither the Dunn, Jr. or Nelson et al. patent remedy any of these deficiencies in that they do not disclose fused silica particles or silica nitride particles having a purity of not less than 99.5% and a porosity of not more than 0.1%.

As can be seen by comparing Examples 1 and 2 of the present invention, with Comparative Example 1 (see paragraph 0068-0071 of Applicants' specification) the use of particles having a porosity of not more

than 0.1% allows the initial condition of the bed to be completely maintained after 18 months and results in no new alarms being sounded due to unreactive chlorine gas detection in the exhaust gas from the chlorination furnace. On the other hand, when fused silica with a porosity of 1.3% was used as a material of the packed bed, the frequency of sounding of the alarm for undetected chlorine gas in the cooling system increased after about 12 months. Moreover, about 50% of the natural quartz, which have been filled until the top part of the distributor at the start of operation, have disappeared. Accordingly, it is submitted the use of particles having a porosity of not more than 0.1% provides unexpectedly advantages results not suggested by the prior art.

Noting that the furnace in Uchida blows air or the like, it is submitted there would not have been any reason to modify the ceramic of Uchida to be resistant to corrosion from chlorine gas. Therefore, the presently claimed invention is patentable over Uchida alone or in combination with the other cited references.

In view of the foregoing amendments and remarks, favorable reconsideration and allowance of all of the claims now in the application are requested.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No.

01-2135 (Case: 1150. 46533X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

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